

# Generic Detector R&D for an Electron Ion Collider

10<sup>th</sup> Advisory Committee Meeting  
January 28-29, 2016

*Thomas Ullrich (BNL)*  
January 28, 2016



# Long Range Plan Recommendations

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## Total of 4 recommendations

### RECOMMENDATION III

*Gluons, the carriers of the strong force, bind the quarks together inside nucleons and nuclei and generate nearly all of the visible mass in the universe. Despite their importance, fundamental questions remain about the role of gluons in nucleons and nuclei. These questions can only be answered with a powerful new electron ion collider (EIC), providing unprecedented precision and versatility. The realization of this instrument is enabled by recent advances in accelerator technology.*

**We recommend a high-energy high-luminosity polarized EIC as the highest priority for new facility construction following the completion of FRIB.**

## Total of 2 initiatives

### **B: Initiative for Detector and Accelerator Research and Development**

*U.S. leadership in nuclear physics requires tools and techniques that are state-of-the-art or beyond. Targeted detector and accelerator R&D for the search for neutrinoless double beta decay and for the EIC is critical to ensure that these exciting scientific opportunities can be fully realized.*

- *We recommend vigorous detector and accelerator R&D in support of the neutrinoless double beta decay program and the EIC.*

### **Next Steps:**

- National Academy of Science Review
  - ▶ Duration 18 month
  - ▶ Process has already started
- CD-0 possibly in 2017 (Mission Need)

# Funding Defines Timeline

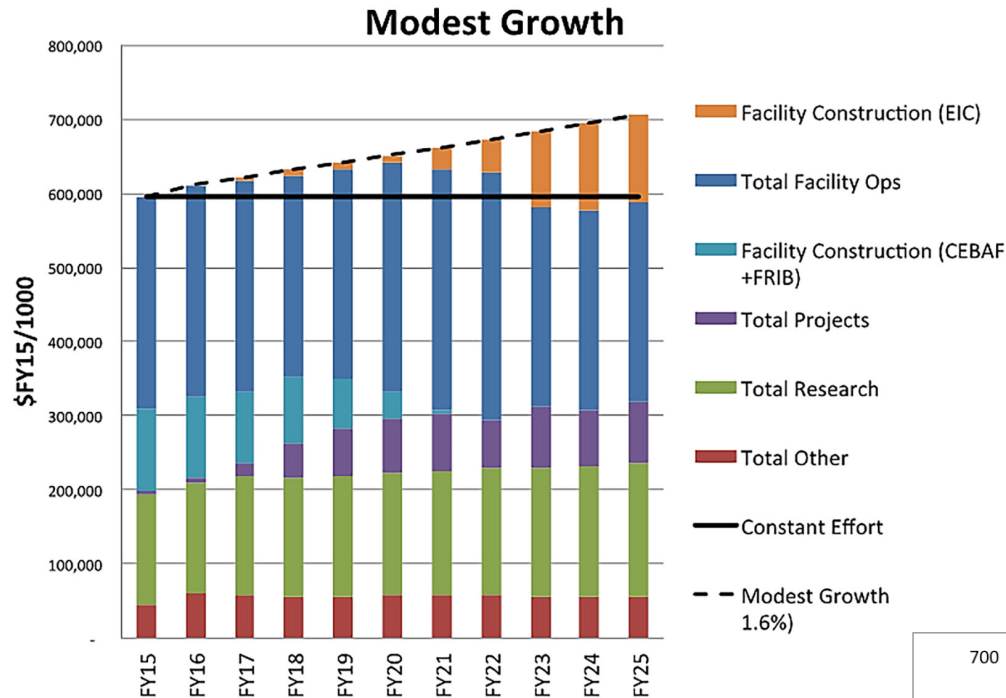
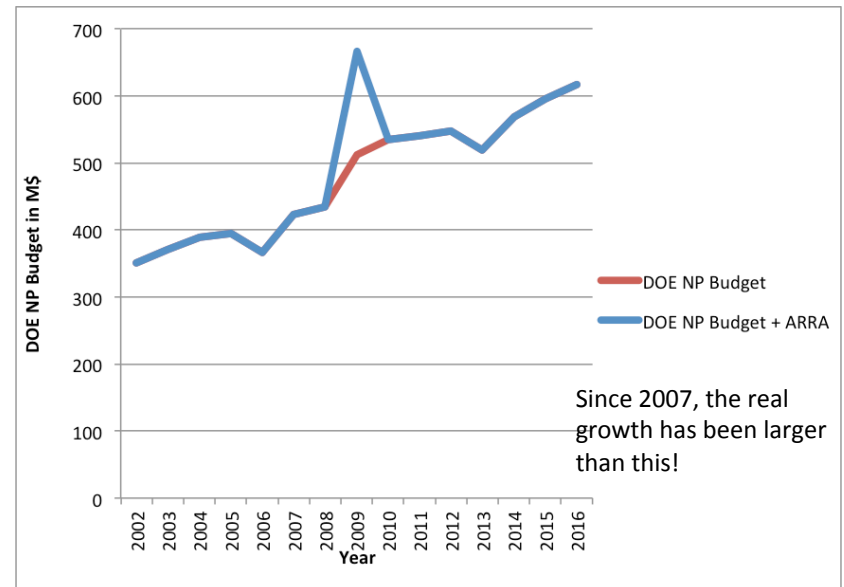


Figure 10.4: DOE budget in FY 2015 dollars for the Modest Growth scenario.

from 2015 NSAC LRP

from D. Geesaman's  
talk at EICUG Meeting at UCB

Is This Realistic?  
DOE NP Budget history in as-spent dollars



# EIC User Group Is Being Formed

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## The EICUG

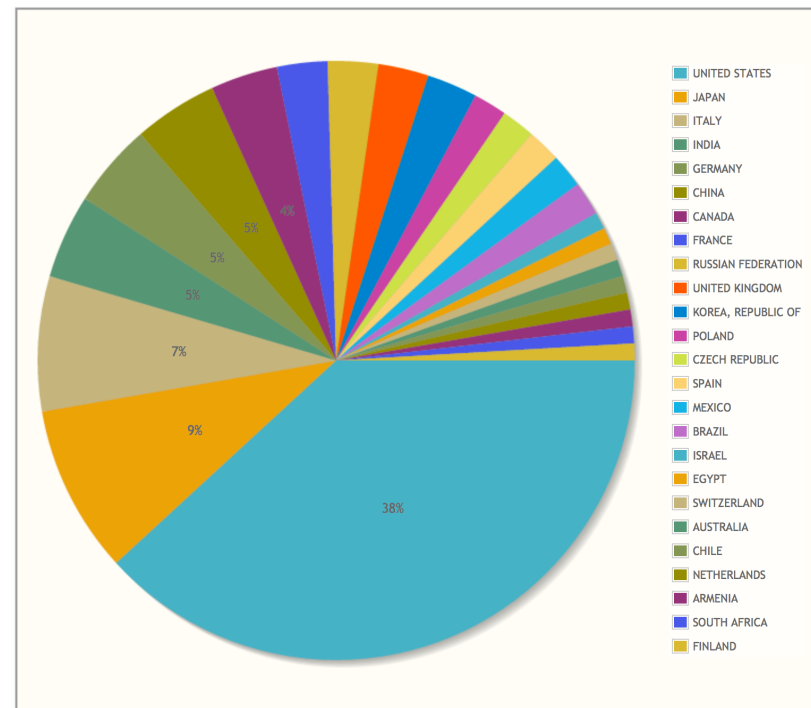
- will work together, across these efforts, to enhance and refine the science case beyond the one that has been presented in the EIC White Paper (<http://arxiv.org/abs/1212.1701>),
  - help define and coordinate the research equipment including the necessary detector technologies & designs required to achieve the scientific goals of the EIC,
  - effectively engage with other stakeholders (e.g. funding agencies, laboratories) to make EIC and its science a reality
  - is not a collaboration
- 
- Charter will be formulated in the next weeks, followed by UG wide discussion and vote likely in April.
  - Discussion about Physics Working groups started

# EIC User Group Is Being Formed

- So far 548 members from 121 institutions from 27 countries
- <http://eicug.org> (official announcement soon)



Institutes by country



*To sign-up, send me an email*

# EIC User Group Meeting

- EIC UG Meeting in Berkeley (Jan 6-8)
  - ▶ Very well attended
  - ▶ Good discussion on future direction and organization
  - ▶ Parallel session on EIC R&D plus plenary summary (Klaus)
  - ▶ Many speakers emphasized importance of EIC R&D incl. Tim Hallman (Ass. Director of OS NP) and Don Geesaman (NSAC Chair)

ELECTRON ION COLLIDER USER GROUP MEETING 2016



HOME	<b>ELECTRON ION COLLIDER USER GROUP MEETING 2016</b>	<b>EVENT DATE</b> Jan. 6-9, 2016
IMPORTANT DATES		<b>LOCATION</b> 1 Le Conte Hall UC Berkeley Berkeley, CA USA
ANNOUNCEMENTS	UC BERKELEY, JANUARY 6-9, 2016	<b>CONTACT</b> seritterbush@lbl.gov
AGENDA	The Electron Ion Collider Users Meeting will take place on Wednesday January 6th through Saturday January 9th, 2016 on the UC Berkeley Campus. We will discuss future plans for the Electron Ion Collider, particularly refining and strengthening the physics case, and discussing the technical plans for the collider and detector(s). The meeting will be in Le Conte Hall on the UC Berkeley campus, a short walk from downtown Berkeley, with its vibrant restaurants and cultural life.	
REGISTRATION		
LIST OF REGISTRANTS		
COMMITTEES		

# EIC R&D Advisory Committee

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## Standing Advisory Committee:

Marcel Demarteau\* (Argonne)

Carl Haber (LBNL)

Peter Krizan (Ljubljana)

Ian Shipsey (Purdue)

Rick Van Berg (UPenn)

Jerry Va'vra (SLAC)

Glenn Young (JLab)

\*chair



Please use coffee breaks and Thursday's dinner for informal discussion with committee members

**Note:** Speakers (or representative) are invited to the Committee Dinner tonight at 7pm at the Brookhaven Center Club providing ample opportunities to touch base with committee



# Contracts, Travel, ...

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- Transition in contract administration from Xiaofeng Guo to Liz Mogavero completed
- **Remember**
  - ▶ Please submit your invoices on a regular basis. Best is **monthly**. Do not wait for months and accumulate them.
  - ▶ Many Statement of Work (SoW) were regarded as too short causing unnecessary delays. DOE requires more than a sentence. That should be easy since you can easily copy/paste from your proposals.
  - ▶ DOE requires annual plan of anticipated conference (e.g. IEEE & workshop attendance (does not include test beams, small meetings etc). Send us your list now!
  - ▶ Foreign travel to conferences needs to be **pre-approved 60 days in advance**. Contact Liz **before** you plan your travel. Submit your travel plans early.



# Last But Not Least

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Thank you



- To the committee who does such an amazing job - the program is alive because of your work,
- to Liz for taking over the burden of dealing with the EIC contracts,
- to Tom Throwe and Alexander Kiselev for their A/V and help,
- and what would we do without Rachel who makes all this happen!